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ABSTRACT

Project TIME (Training Initiative for Manufacturing Employees) was an 18-month National Workplace Literacy Program conducted by Lord Fairfax Community College in conjunction with an automotive parts plant and Triplett Technical and Business Institute in Virginia. Project TIME had three primary objectives: to help employees obtain the basic literacy skills required in a sophisticated manufacturing facility, to enhance their potential for continued employment and/or career advancement, and to increase their productivity. A job/task analysis and literacy audit were conducted to identify the plant employees' training needs. The project curriculum that was developed included courses in the following: calculator math, creating/understanding graphs, algebra I, on-the-job communication, technical reading and writing, decision making and goal setting, career development, computer-assisted writing and math, English skills for the workplace, and team building. During the project's 4 semesters, a total of 202 individuals participated in 1,260 hours of instruction. After completing the Project TIME courses, participants exhibited significant skill gains on posttests and improved job performance. (Appendixes constituting approximately 75% of this final evaluation report include nine learning activities from the course in communicating on the job and a program brochure. A final project performance report is also included.) (MN)

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ED 378 405

Project TIME

Final Evaluation Report

GRANT # V198A30052

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PROJECT TIME: FINAL EVALUATION REPORT

In September, 1993, Lord Fairfax Community College (LFCC) selected Drs. Connie Schroyer and David Payne of the HayGroup to perform External Evaluation services for Project TIME (Training Initiative for Manufacturing Employees), a National Workplace Literacy grant funded by the Department of Education. This report documents the findings from the External Evaluation. Section I includes background information, the project objectives, and an evaluation of project start-up and implementation activities. This section includes an evaluation of the following phases of the project: task analysis, literacy assessment, curriculum development, and recruitment and retention of participants. Section II presents a model for evaluating the impact of Project TIME on the company, AII (Automotive Industries Inc.), as well as on the individuals who participated in the project. The impact or outcome evaluation includes participant reactions to training, skills learned, changes in on-the-job performance, organizational impacts, and impacts on the individual participants. The data for each of these areas are presented and summarized, and recommendations for project improvement are included in Section II.

SECTION I. PROJECT OVERVIEW, START-UP, AND IMPLEMENTATION

The National Workplace Literacy Program, authorized by the Adult Education Act, provides funding to partnerships involving at least one educational institution and one business or labor organization. Partners work together to provide literacy, English-as-a-second-language, computation, problem-solving and other skills needed by workers to perform job tasks effectively. In 1993, 234 institutions applied for these federally funded grants. Fifty-four grants were funded for a total of over $21 million.

Project TIME is an 18 month National Workplace Literacy grant awarded to Lord Fairfax Community College (LFCC) in conjunction with Automotive Industries, Inc. and Triplett Technical and Business Institute. LFCC received $394,653 in federal funds, and the partnership matched the federal funds with $118,396. Automotive Industries, Inc. (AII) in Strasburg, VA, required upgraded skills due to a number of technological changes which resulted in new work processes and new equipment. Prior to Project TIME, AII worked to retrain existing employees; however, efforts were marginally successful because of the basic literacy level of the employees and the new skills demanded by a sophisticated manufacturing facility.

As a result of the changes taking place at AII and the need for upgraded skills, the goals of Project TIME were to:

1) assist employees in obtaining the necessary skills needed in a changing workplace;

2) enhance the employees' potential for continued employment and/or career advancement;
3) assist employees in increasing their productivity; and
4) allow employees to work toward their individual educational goals.

Project Start-Up Activities

Project start-up consisted of hiring five project staff members -- a director, a counselor, two instructors, and a project secretary -- and two workstudy students. A curriculum consultant was hired to assist with curriculum design, and Drs. Connie Schroyer and David Payne of The HayGroup were hired as External Evaluators. A Project Advisory Committee was also formed at the beginning of the project to provide input to and oversee the project. This committee consisted of a representative sample of employees from AII -- hourly workers, supervisors, and general management; administrative personnel and faculty from LFCC; and community business leaders. Additional project start-up activities included a job/task analysis, a literacy audit, participant recruitment, and curriculum development. These activities are discussed below.

Job/Task Analysis and Literacy Audit. The job/task analysis consisted of observation of various positions throughout the AII plant by the Project TIME staff. This phase of the project allowed the project staff to go into the plant and begin building relationships and trust with the workers, supervisors, and managers. The entire tone of the project was set by the rapport built by this phase, and the excellent participation rates (described in the next section) were more than likely a result of this interaction.

Project staff members recorded their observations on a standard form that included a brief position description, list of materials used, list of skills used, vocabulary specific to the job, and cross-training opportunities. Sixteen different jobs were included in the job/task analysis, and all departments were represented. Since the observations were conducted by the instructors, they were able to obtain a complete understanding of the jobs, and this greatly facilitated their ability to write curriculum that was directly tied to the job context. A process analysis was also conducted on some of the product lines which described the entire process from raw material to finished end product. The relationship of one job to the next was described as part of this process analysis, which also facilitated the understanding of the work environment at AII.

While this method of job/task analysis (observation) allowed for an understanding of the job tasks by the instructors and the building of rapport with employees, it could have been supplemented with a method for determining more specific job tasks and skills. The addition of structured input from the employees or supervisors of these jobs would have provided a more comprehensive job/task analysis. Examples of a more structured approach

include focus groups of employees and supervisors to discuss the specific job tasks and skill requirements, or a short job analysis survey with task list ratings.

The job/task analysis was supplemented by a literacy audit conducted via a Supervisor's Input Sheet. Supervisors were asked to list the skills required for the jobs they supervise such as: 1) reading requirements for work-related materials and documents; 2) mathematical requirements for computations; 3) writing requirements; 4) problem-solving, teamwork, and communication requirements; and 5) any additional skill requirements. Input was collected from 17 supervisors. While this form provided useful information for the development of the curriculum, information could have been captured in more detail if supervisors had been asked about skills needed for specific job tasks and about the level of skill required (e.g., high , moderate, or low level of skill). This level of detail would have allowed the courses to be tailored to the specific levels of skills required on the jobs.

Recruitment and Participation. As was mentioned previously, the job/task analysis served as an important vehicle for participant recruitment. Early contact with project staff built trust as evidenced by the high participation rates. Other means of recruiting participants included a letter to all employees that described the classes offered, the scheduling, the benefits, and other incentives. These incentives consisted of no grades, no homework, reimbursement for child care and travel expenses, and attendance while on the clock. In addition, flyers were distributed throughout the plant, and supervisors and managers were encouraged to inform their employees of the program.

Table 1 presents the data for enrollment in the program by semester. These data represent the total number of participants enrolled and the number of slots filled at the time of registration. The data on attrition by semester is presented in Section II. A total of 202 individuals participated in total, filling 577 slots. Contact hours, the number of hours that instructors taught classes, totaled 1,260; however, program participants received a total of 12,002 hours of instruction. Analysis of the data by semester showed that participation rates were very high for the first semester. One hundred and sixty participants enrolled, filling 260 total classroom slots. Note that the first semester had 160 of the 202 total participants, which means that many of the slots were filled by repeat students who continued to take classes throughout the program. However, 42 (202 minus 160) joined after the first semester.

	Semester 1 9/7/93 - 12/2/93	Semester 2 1/3/94 - 3/31/94	Semester 3 4/18/94 - 7/14/94	Semester 4 8/1/94 - 10/31/94
# Enrolled	**160**	**70**	**61**	**91**
# Slots Filled	**260**	**90**	**87**	**140**

Total number of participants: 202
Total number of contact hours: 1,260

Table 1: Project Participation by Semester

Project TIME Curriculum. Project TIME curriculum consisted of the following classes for the first semester:

- Calculator Math
- Creating and Understanding Graphs
- Algebra I
- Communicating On The Job I
- Technical Reading and Writing
- Problem-Solving Through Reading
- Words At Work and Beyond
- Decision Making and Goal Setting
- Career Development

Other classes that were added in later semesters include:

- Basic Math
- Algebra II
- Metric Math
- Communicating On The Job II
- Computer Assisted Writing & Math
- College Prep English & Math
- GED Prep
- English Skills For Workplace Writing
- Speaking Skills for the Workplace
- Listening Skills
- Team building
- Individual Tutoring

The classes added in later semesters reflect the interests of project participants and their desire to learn more about these topics. See Appendix A for a sample curriculum (Communicating on the Job). Any requests for additional curricula should be sent to LFCC at the address on the cover.

Course curriculum was developed using the following adult learning philosophies:

1) Teaching is an interactive process -- not a process where students are passive receivers of knowledge; therefore, classes should not fit traditional education models, but should build on participants' problem-solving abilities and allow participants to take responsibility for their own learning;

2) All of the classes should involve developing participants' cognitive skills (i.e., problem-solving, critical thinking, and reasoning skills); and

3) Adults are natural problem-solvers and as such, they bring a tremendous amount of knowledge to the classroom. The classes should tap into that life-based experience and translate it into academic terms.

At the beginning of each class, this philosophy was emphasized very strongly. Students were given control over how the class would be run and were told that they would be active participants throughout.

The External Evaluators reviewed Project TIME's curriculum for the match between the skills required (as determined by the job/task analysis) and the skills taught in training, the extent to which the materials were tied to well-specified learning objectives, and the extent to which the materials were related to the "context" of the job.

Match between skills required and skills taught in training

- *Overall the curriculum covered the skills needed by the employees at AII.* For example, technical reading and writing, problem-solving, words at work and beyond, communicating on the job, math, and graphs all should improve on-the-job performance. According to the task analysis (job observation) performed by the instructors, these skills are needed in varying degrees in most of the jobs at AII.

- *The curriculum also included skills important for other project objectives: helping participants gain skills important for self-development and continued educational achievement.* Classes such as career development, college prep English and GED Prep were specifically geared toward individual self-development. Even those classes specifically tied to job requirements included examples and lessons that could be used for individual development as well as on-the-job improvement. These classes included activities that helped individuals understand their benefits and options (e.g., family leave act, stock options, and seniority rights).

The extent to which the materials were tied to learning objectives

- *The curriculum was closely tied to the learning objectives and was presented in an easy-to-follow format.* (See comment below for the math and graph classes) For each class, the learning objectives were clearly spelled out and it was easy to tie the class lessons and activities to the objectives. Student handouts were also provided with the learning objectives and lesson plans.

- *The learning objectives and curriculum for the math and graph classes could have been more clearly defined.* The outlines of the curriculum for the math and graph classes were very sparse, and in some cases it was difficult to understand exactly what activities were supporting which learning objectives.

The extent to which the training was tied to the job context

- *The curriculum was very much tied to the job context.* Most of the lessons and activities included something from the job context. For example, samples used for reading, scenarios used for problem-solving, and math word problems all included work-related examples.

- *More activities that related to people's specific jobs may have helped employees to gain a better understanding of other jobs in the plant.* As stated above, most of the activities were from the organizational context, but did not necessarily include job-specific activities. Allowing employees to discover more about other jobs in the plant would have helped them understand the "big picture" as well as understand how what they do fits into the overall organizational context. Examples of how to do this might have included discussing words that were specific to their job only (such as in Words at Work and Beyond class), or discussing problems or communication scenarios that had to do with their specific job situation, and have others discuss how these scenarios might have impacted their specific job.

Project Accomplishments

Project accomplishments included the successful development of 24 different classes with modifications made to some of these classes for subsequent semesters. Project participation was very high the first semester, and many of these employees continued to participate in classes and provided suggestions for future class offerings. Managers and supervisors were actively involved through the advisory committee and other informal means of communication, and support for the project was high throughout the plant. In fact, the implementation of Project TIME was judged to be so successful by AII that they have decided to institutionalize the program and continue the training after the grant has expired. AII is hiring one of the Project TIME instructors as a Human Resources Development Manager to continue training employees. In addition,

AII worked with the Project TIME staff to develop and pilot test a class on Team Building that became a requirement for employees in one of the plants.

SECTION II. PROJECT EVALUATION

The evaluation of Project TIME was conducted using the model shown on the following page in Figure 1.

This model is based on Kirkpatrick's (1959) model of evaluating the impact of training or educational programs in organizations. Consistent with Kirkpatrick, the model evaluates the training in terms of participants' reactions, learning, changes in behavior on the job, and organizational results. However, the model for this project also includes measures of participation in the project and measures of individual goal achievement related to self-development and continued education. Therefore, the following types of methods were used to evaluate project effectiveness:

1) Class participation, which includes attendance and retention data;

2) Participant reactions to the value of the classes, which include participant evaluations of the courses and comments made on end-of-semester individual training plans;

3) Skills learned in classes, assessed by pre- and post-semester assessment comparisons;

4) Changes in on-the-job behaviors, which include supervisors' rating forms, focus group feedback, and qualitative and anecdotal data from instructors, employees, and supervisors;

5) Organizational results, which include qualitative data from management and employees; and

6) Individual outcomes, which include qualitative information from the individual training plans and instructor anecdotal information as well as records on participants enrolling in college and achieving their GED.

Class Participation

Table 2 presents the number of participants enrolled each semester, and the total number of drop-outs each semester. Semester 1 had the greatest number of participants, probably due to the initial publicity and recruitment activities which took place at the beginning of the project. One hundred and sixty participants enrolled semester 1, and 22 dropped out for an attrition rate of 14%. Semester 2 had 70 enrollees, with 22 drop-outs for an attrition rate of 31%. The higher attrition rate in semester 2 may have been due to the extreme weather conditions (snow, ice, and very cold temperatures) that impacted the region during the winter months. Semester 3 had 61 enrollees, with 12 dropouts for a 20% attrition rate, and Semester 4 had 91 enrollees, with 7 dropouts for an 8% attrition rate.

TYPE OF MEASURE	TRAINING MEASURES			PERSONNEL PERFORMANCE MEASURES	PLANT PERFORMANCE MEASURES	INDIVIDUAL OUTCOME MEASURES
Expected Outcomes	Class Participation	Positive Reaction from Training Participants	Increase in Skills	Increased use of Skills on the Job Behavior Changes on the Job	Quality Productivity Morale	Career Advancement Continued Employment
Methods	- Attendance - Attrition	- End- of -course Self Report Reaction to Training	- Pre and Post Assessments Using Problem Solving Scenarios	- Supervisor Rating Forms - Supervisor Focus Groups	- Supervisor Input - Anecdotal Information	- Self Reported Accomplishments - Anecdotal Information

Short-Term → Long-Term

Figure 1: Model for Project TIME Evaluation

Semester	Number Enrolled	Drops	Attrition Rate
1	160	22	13.75%
2	70	22	31.42%
3	61	12	19.67%
4	91	7	7.69%

Table 2: Attrition Rates by Semester

Class attendance percentages are presented in Table 3. Again, Semester 2 had some low attendance rates which were also probably impacted by the weather conditions. In looking for trends in the types of classes that consistently have high or low attendance, no classes stand out as having the highest attendance; however, algebra consistently has the lowest attendance rate within each semester. Overall attendance was fairly high; especially considering that the classes were offered early in the morning and late in the afternoon, either prior to or after participants worked a full shift.

Class/Semester	1	2	3	4
Algebra I	73.04%	60.00%		
Algebra I & II			53.43%	
Algebra II		87.08%		
Basic Math		61.00%		
Building Team Skills				76.74%
Calculator Math	81.62%		67.00%	
Career & Educational Development				82.56%
Career Development	89.83%			
College Prep		58.20%	73.10%	
College Prep - Math				91.67%
Communicating on the Job I	80.60%	71.06%	47.14%	79.00%
Communicating on the Job II		68.63%		
Computer - Assisted Math			74.36%	75.00%
Computer - Assisted Writing			61.08%	90.60%
Computer - Assisted Writing & Math			90.40%	
Creating & Understanding Graphs	94.05%			
Decision-Making & Goal Setting	91.28%			
English Skills for Workplace Writing		66.60%		
GED Prep		66.58%		86.75%
Metric Math			91.17%	
Problem Solving	84.13%			
Speaking Skills for the Workplace			72.88%	
Technical Reading & Writing	81.48%	85.00%	75.25%	
Words at Work/Vocabulary	68.38%			

Table 3: Class Attendance by Semester

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Participants' Reactions

Participants' reactions to the training were captured on Instructor and Course Evaluation (I&CE) Forms which included a rating of the instructor on 7 dimensions: mastery of the subject matter, organization of course, clarity of presentation, stimulation of interest, availability for assistance, concern for students, and overall effectiveness. This information was used to provide instructors' feedback from one semester to the next, and to facilitate the improvement of their teaching skills.

In addition, the I&CE forms asked for participant feedback on any new skills or attitudes developed or improved as a result of the class, the extent to which participants were using skills learned on the job, how these skills were used, whether they impacted productivity, and any suggested improvements.

Participants also completed End-of-semester Individual Training Plan (ITP) forms which assessed the extent to which their individual goals were met, any new goals developed as a result of the courses, and whether their expectations for the class were met.

Comments from the I&CE and ITP forms are summarized in the following paragraphs, with quotes provided for illustrative purposes. The information presented in this section will focus on skills learned, and goals and expectations met, since quotes regarding changes in on-the-job performance and organizational productivity are reserved for following sections.

Many of the quotes reflected an increased understanding of the subject matter taught in the courses: reading, writing, graphs, algebra, communication skills, problem-solving, decision-making, and computer skills. However, regardless of the subject matter, many participants responded that the classes helped them in five important ways:

1) increased self-confidence and initiative;
2) increased understanding of how their jobs are related to other jobs;
3) increased ability to think, reason, and solve problems;
4) increased ability to deal with other people through enhanced communication, listening, and teamwork skill; and
5) a thirst to continue educational and learning experiences.

The following quotes reflecting these increased skills speak for themselves.

<u>Increased self-confidence and initiative:</u>

"When I have a problem with my machine I now think it through and try to fix it myself instead of calling the technician right away." Creating and Understanding Graphs

"I feel confident I can do what I set out to do." Career Development

"I try to solve problems on my own before asking someone." Career Development

"...I'm more talkative than I was when class first started, and I feel better about myself." Words at Work and Beyond

Increased understanding of how job is related to other jobs:

"This class has shown me how to look at the work I do as part of someone else's job. My attitude toward this part of my job has improved." Creating and Understanding Graphs

Increased ability to think, reason, and solve problems:

"I have developed...some problem solving ability in regards to what I could to improve some of these graphs." Creating and Understanding Graphs

"This course has made me think again and this is great!" Calculator Math

"Reasoning skills, self-confidence in attempting to find the unknown, teamwork - working together to solve problems." Practical Algebra

Increased ability to deal with other people:

"I try to listen more to others talking and to look up more information before making [a] decision." Decision Making

"Listening is a big part of communicating." Communicating on the Job

"I've learned how to deal with difficult people. This class taught me how to get fellow co-workers involved as a team." Communicating on the Job II

Thirst for continued educational experiences:

"Now I have a drive to learn more because I can see its application." Calculator Math

"I realize[d] that after 20 years of being out of school, I can still learn. The sky is the limit." Technical Reading and Writing

"They prepared me to be able to take the college placement test..." College Prep

These comments reflect an overwhelming positive reaction from the participants who took classes offered by Project TIME. Very few negative comments were made, and those that were made tended to focus on the number of classes (too

few for the winter semester) and the way the classes were taught (e.g., too much group interaction, not enough group interaction, etc.). However, these comments were very few and the significant majority of comments were positive. As is demonstrated from the comments cited above, the positive reactions were a result of a combination of increased skills, increased self-confidence, and increased sense of a capability for continued learning and education. While an increase in skills is easier to measure (see next section), an increase in self-confidence and morale is much more difficult to assess. However, supervisor input and instructor anecdotal information on how this increase in self-confidence and esteem has manifested itself in changes in on-the-job behaviors is presented in the appropriate sections later in this document.

Assessment of Skills Learned

Participants' skills were assessed by administering a problem-solving scenario prior to and after each semester. Participants were instructed to read a scenario of a problem to be solved, and they were provided guidelines to follow when writing their response. Participants were also given the following areas for evaluation:

- Understands scenario (Reading assessment)
- Demonstrates strategy (Decision making assessment)
- Performs calculations (Math assessment)
- Arrives at solution (Problem-solving assessment)
- Writes response (Writing/communicating assessment)

Participants were given different scenarios each semester to avoid memory and practice of the scenario given first. For repeat students, the prior semester's post-test scores served as the next semester's pre-test scores. Instructors scored the assessments using a scoring sheet that listed criteria for each evaluation area listed above. A subtest score was derived by adding the points achieved for each criteria listed under each area. A total test score was derived by adding the scores on each of the subtests. In order to determine if the difference between the pre- and post-test scores were significant, a paired t-test was performed on the total score and each subtest score. Table 4 presents the data for each of the three semesters. (Given the large number of repeat participants, no assessments were given for the third semester.) The difference score is the post-test score minus the pre-test score; therefore, a positive difference score indicates an increase in performance.

	Semester 1 N=124	Semester 2 N=30	Semester 4 N=24
Total Test Score	**2.92***	**2.53***	**2.54***
Reading Subtest	**0.47***	**1.33***	**1.42***
Decision-making Subtest	**0.49***	**0**	**0.62**
Math Subtest	**1.62***	**-0.36**	**0.04**
Problem Solving Subtest	**0.10**	**0.30**	**0.67***
Writing Subtest	**0.25**	**0.80***	**-0.25**

*** Significant at $p<0.05$**

Note: Numbers represent the post score minus the pre score. Therefore, positive numbers reflect an increase in test scores.

Table 4: Pre- and Post-Semester Assessment Data

As the table shows, a significant increase in post-semester total assessment scores occurred in each of the three semesters. These data clearly show that participants gained critical skills necessary for completing the problem-solving scenarios. These total test score increases appear to be due to the Understands Scenario/Reading subtest, as the reading subtest scores also significantly increased each semester. The results for the other subtest scores were less consistent. Math scores and decision making scores significantly increased the first semester, but did not significantly increase the second and fourth semesters. Problem-solving significantly increased the fourth semester only, and writing significantly increased the second semester only.

Changes in On-the-Job Behaviors

Changes in on-the-job behaviors were assessed via feedback from supervisor rating forms, a supervisors' focus group conducted at the end of the project, participant qualitative data, and instructor anecdotal information.

Supervisor Rating Forms. Supervisors were asked to rate the importance of a list of twenty skills and behaviors for successful job performance. In addition, supervisors were asked to rate each Project TIME participant on their use of these skills and behaviors on the job. The response options were: no increase, some increase, significant increase, and not observed. The skills and behaviors rated are listed in Table 5.

- Follow all safety standards.
- Notify proper authorities of all needed equipment maintenance or repair according to set procedures.
- Use SPC charts without error.
- Maintain dependable attendance and punctuality.
- Demonstrate desire and willingness to learn and improve.
- Possess self-confidence in the work environment.
- Adjust to changes in job assignments, systems, procedures, schedules, policies and supervisors.
- Transfer existing knowledge to new or more difficult skills.
- Understand accountability for results.
- Understand organizational structure, supervision, policies, rules, schedules, deadlines, and performance standards.
- Exercise initiative in the absence of instruction.
- Exhibit a sense of pride in quality work.
- Understand and participate in the team concept.
- Use appropriate tone of voice, attitude, and body language during oral communications.
- Ask and answer questions coherently to obtain, clarify, and verify information.
- Follow spoken instructions.
- Report accurately what others have said.
- Give accurate oral instructions.
- Gather facts; sift through details for the purpose of analysis and decision-making.
- Recognize problems and identify methods of solving them.

Table 5. Skills and Behaviors Rated by Supervisors

The first key finding was that supervisors validated the notion that all of these skills and behaviors are important for on-the-job performance. The second key finding was that a large majority of participants (77%) were rated as demonstrating an increase in at least half of these skills/behaviors. In fact, many participants were rated as showing increases in all skills as a result of class participation. Since each of the classes focused on multiple skills (e.g., Math classes also focused on communication and problem-solving), the analysis was not broken down by class.

Supervisor Focus Groups. Twenty-five supervisors participated in one of a number of focus groups conducted during the final semester of Project TIME. Questions asked in the focus groups centered around how the classes had been useful, which classes were most useful, specific examples of benefits they've observed, improvement in on-the-job performance, and improvement in plant productivity.

Supervisor responses agreed with those of participants that an increase in self-confidence and morale resulted from participation in Project TIME. Several examples of how this increase was tied to on-the -job behaviors were given:

"Any improvement in individual performance, even if it's only in his attitude, helps the plant."

"I'll take a positive attitude and less skill anytime over the reverse."

Supervisors also discussed how increased skills in a variety of areas changed behaviors on the job:

"Employees have improved their communication skills and now effectively conduct plant tours."

"I see improved math performance on production sheets."

"I review all the reports for things like grammar, punctuation, etc. I can see improvement in them...I think the class just made them more aware of how they were writing."

Other advantages of project participation were noted:

"I also believe that it has improved our image in the community. Our community relations are better."

"Project TIME people seem to have a heightened awareness of what goes on in the plant."

In addition to these quotes from supervisors, specific examples of how individual participants made positive changes in their behavior were noted throughout the

project by the instructors. Increased self-confidence and ability to communicate were demonstrated through proposals prepared by individuals regarding solving problems in shipping and improvements in housekeeping procedures. One participant expressed her ideas by writing memos to supervisors on several different topics ranging from the arrangement of her production line to use of the family leave policy. Another individual made a presentation to the General Manager and provided suggestions for a new class taught by Project TIME.

These changes are reflected in many of the participants' comments such as:

"I had to give a presentation to different people about our MBA team and the class helped me organize and deliver it properly." Speaking Skills for the Workplace

"I used these skills in my MBA meetings." Communicating on the Job II

"By helping to develop better systems of operation where allowed to." Computer-Assisted Math

"I do numerous papers describing jobs and inventory requirements involving my job." College Prep

Organizational Results

The impact of any organizational intervention, including training, on bottom line productivity is difficult to assess. One problem is that these programs are generally never performed in a vacuum; other changes are taking place within and outside the company that also impact on productivity. Project TIME is no exception, and throughout the fourteen month period in which classes were given, changes in plant production, participation in other training programs, and the formation of committees to implement changes within the organization may also have impacted on productivity.

Given these difficulties in assessing organizational results, input was captured from supervisors during the focus groups regarding the impact of Project TIME on organizational productivity. Supervisors' comments were mixed, with some saying that while the program did not have a direct impact on productivity, the increase in self-confidence and morale was positive in and of itself. For example, one supervisor commented that he had not seen any on-the-job improvements that impacted productivity as a result of the classes, but that *"I've seen enhancements of employees' previous training--like SPC."* Another supervisor commented that many of the people who participated in Project TIME were already good employees, indicating that he saw no real productivity enhancements. However, other supervisors were more positive and pointed to specific instances where the training had impacted on actual productivity. The following quotes reflect these instances:

"One employee who has taken many classes has become very effective at running the line at 102 - 103%. Before, he would run his line at 90% and thought that was fine. Now he is more conscious of productivity,"

"[Project TIME is] viewed as the company having an interest in <u>them</u>, not just an interest in the company's production. Attitude carried over to quality and productivity."

"MBA teams are more effective because of communication classes. Employees express their ideas more effectively."

"Willingness to get involved and improved attitude--It's intangible, but indirectly these things are very related to productivity."

Individual participants also gave examples on the end-of-course evaluation forms regarding how skills learned in the classes resulted in increased productivity:

"Using the math skills I am able to calculate the line speed and add % of scrap." GED Prep

"I can see mistakes and correct them much faster now, thus improving my productivity." College Prep Math

Individual Outcomes

Two specific goals of Project TIME were related to individual outcomes: the enhancement of employees' potential for continued employment and/or career advancement, and the opportunity to work toward their educational goals. Significant individual accomplishments were made by the participants of Project TIME in both of these areas.

Regarding employment opportunities and career advancement, a number of individuals were promoted and these promotions were directly tied to participation in Project TIME. In one case, an individual who was pursuing his GED sought a promotion by creating a new job for himself. The company approved the change and gave him a new title and an increase in pay. Many individuals have achieved enhanced recognition and opportunities that they would not have had without their Project TIME experience. For example, a participant is now conducting plant tours for executives from Ford, and other participants are involved in committees and panels as a result of their increased self-confidence and communications skills. These opportunities benefit both the individual, through increased visibility and enhancement of communication skills, as well as the company, through increased employee involvement in the organization.

Related to increased educational opportunities, three individuals from the College Prep class have enrolled in college, and two individuals from other classes completed their GED. In total, 24 participants in Project TIME have enrolled at LFCC during the course of the grant. The following quotes reflect the plans participants have to continue education:

"My new goal since I've been enrolled in Project TIME, is to enroll in classes at Lord Fairfax." Communicating on the Job I

"They prepared me to be able to take the college placement test (I hope)." College Prep

"I want to learn enough math to complete my degree in aviation science." Computer-Assisted Math

However, many increased educational experiences are the result of self-learning. Comments made by many individuals on the end-of-course evaluation forms indicated they will continue to seek educational opportunities on their own, and they will become more actively involved in their children's education as well. One participant stated her goal was:

To learn algebra so I could help my children with their homework..." Algebra I

Other significant accomplishments made by Project TIME participants ranged from a non-reader learning to read (which significantly increased his self-esteem), to a group of students learning about the stock market and forming a stock club which continues to meet.

The following quotes represent some other advantages gained from the classes:

"I think I can make better decisions concerning my son and my marriage." Decision-making

"I even learned how to write a resume." Computer-Assisted Writing & Math

Many individual outcomes were not directly measured as part of this evaluation; however, they should not be ignored as a significant outcome of this project. The quotes reflect the varied goals of participants as well as the fact that most participants felt their goals were met.

Summary of Evaluation Findings

The goals established by Project TIME were stated in Section I and this section addresses the extent to which the goals and objectives were met. The goals were as follows:

- Assist employees in obtaining the necessary skills needed in a changing workplace. As was demonstrated by the increase in problem-solving assessment scores, this goal was achieved. Participants' abilities to answer a set of questions around a problem-solving scenario increased, as well as their ability to understand the scenario. This finding is especially notable given that many students continued to take courses in subsequent semesters, and yet the assessment scores consistently improved each semester. In other words, the learning did not level off after one semester, but continued to improve. The assessment scores also indicated that overall ability to solve problems increased regardless of the class taken. This is most likely due to the focus of each of the classes on problem-solving, communication, and decision-making, regardless of the specific topic. Qualitative information obtained from supervisors, management, instructors, and participants also point to the significant increase in self-confidence, ability to deal with others, and problem-solving that has occurred as a result of Project TIME.

- Enhance employees' potential for continued employment and/or career advancement. The skills developed by Project TIME participants will undoubtedly contribute to their continued employment and career advancement. As the General Manager of AII stated *"By any measure, Project TIME has been a huge success in opening the minds of our work force and increasing the knowledge base of every employee enrolled in the program."* In addition, supervisors commented on the increased performance of project participants, and a number of participants have already received promotions as a direct result of the skills learned in training.

- Assist employees in increasing their productivity. While this objective is difficult to quantify, many specific examples were provided where participants increased their productivity as a result of the classes. The following example was provided by an Industrial Engineer at the plant: *"Employees are more willing to speak out and express their ideas...They can tackle the math activities in Kaizen more easily. A math exercise that used to take one and a half hours to complete now only takes thirty minutes to complete."* In fact, increased math skills were mentioned by many participants as saving them time on performing calculations, allowing them to quickly get back to their production job. Increased writing skills reduced errors and changes required on written reports, and increased communication skills resulted in ideas being generated and presented on how to increase productivity, quality, and safety.

- Allow employees to work toward their individual education goals. The number of students who continued to take classes offered by Project TIME, enrolled in college, took their GED, and actively sought out educational opportunities is evidence that this goal was achieved. A thirst for continued learning was also evident in many of the comments made by participants

when asked for feedback at the end of their courses. The instructors made the participants feel comfortable, and as one participant stated, "they treated us like adults." This environment was conducive to adult learning and gave students a positive attitude toward learning which many participants did not have prior to participating in Project TIME.

Recommendations

While the objectives of Project TIME were achieved, a number of recommendations for future implementation of workplace literacy projects are presented in this section.

- In the task analysis phase, determine skill level requirements for jobs in order to set specific training goals. The task analysis provided information on types of skills required for job performance; however, it did not provide specific information on the level of skill required for each job. This information would have assisted in tailoring courses to specific skill level requirements. We recommend benchmarking skills with specific behavioral examples for each skill level (e.g., able to write a memo, able to write a technical report), and obtaining supervisor input on the specific behavioral requirements needed to perform each job.

- Consider having independent skill assessments given by someone other than instructors and/or develop a more objective instrument. The problem-solving scenarios given to participants prior to and after each semester (except semester 3) were scored by course instructors. Since the scoring was fairly subjective (rating written responses on a number of criteria), there was the potential for bias in scoring. In the future, it is recommended that someone other than course instructors score the assessments, or that more objective criteria be developed. If these options are not feasible, then the reliability of scoring should be determined (such as by comparing multiple raters scoring the same subtests).

- Consider developing a more structured and specific supervisor rating form for measuring changes in on-the-job performance. The supervisor rating forms were overwhelmingly positive; however, there is always the risk of supervisors rating people high on all skills just because they feel the training was a positive experience, or that people should be performing well because they participated in training (i.e., the halo effect). While the form provided useful information, it is recommended that, in the future, supervisor feedback should be more structured and specifically tied to performance outcomes in order to avoid halo error. Also, more specific instructions in completing the forms may have helped to avoid this problem.

REFERENCES

Kirkpatrick, D.L. Techniques for evaluating training programs. *Journal of the American Society of Training Directors*, 1959, *13*,3-26.

APPENDIX A

Communicating On The Job I

Lord Fairfax Community College
Project TIME

November '94

"Good communication is as stimulating as black coffee, and just as hard to sleep after."

- Anne Morrow Lindbergh

MEMO TO THE CLASS

This course will allow you to practice oral communications and listening and presentation skills that you may not have learned previously. It is through this practice that we will learn about thinking and other sub-skills that form the foundation of these communication activities.

THINKING: We are going to explore the thinking and analysis that is required in order to make any communication as effective as it can be. The problem-solving cycle of Deming (Plan, Do, Study, Act) is one of the methods of analysis to discover the fundamentals of communication.

TAKING PART IN GROUP ACTIVITIES: Working in a group in the classroom helps you to learn more about working together and teamwork on the job; and working in a group, by definition, means communicating. Many of the activities in this course will be completed in small or large groups that allow you to participate effectively within a group. Don't be afraid to express your thoughts. Your ideas are important, and they deserve to be heard!

ACTIVITY # 01

1. **Independent:** Below is the course description for this class. Read the description and then, in the space provided below, describe why you wanted to take the course.

Communicating On The Job

Improve your oral and written communication skills in order to succeed!

In this class you can increase your verbal and written communication abilities, as well as your listening and presentation skills...all of which are important in working with individuals and teams. Instruction will be conducted in small problem-solving groups. Class activities will include practicing supervisory skills to solve a work-related problem, facilitating group activities, learning and using listening and presentation skills, distinguishing facts from opinions, and writing short reports.

2. **Group:** Share your ideas with the class. Make a note of anything you would like to add to the list you created in response to question 1 above.

3. **Independent:** Based on the class' discussion, make suggestions for a set of class policies that outline how you would like to see this class conducted. These policies may include any guidelines you think would be helpful. Remember, this is your class! List your ideas below. (You may continue writing on the next page if you need to.)

4. **Group:** Share your ideas with the class. Write the class' final list in the space below and keep it available for further reference.

ACTIVITY # 02

1. **Independent:** List as many work-related oral communication situations in which you participate. Quantity, not quality is important **at this point.**

2. **Group:** Share your responses with the class to question 1 above.

3. **Group:** Taking the oral communication situations that we've just listed on the board, label them according to the person(s) you would be speaking with in each situation.

4. **Independent:** Using the matrix on page 3 of this activity, begin with the 2nd vertical column and fill in the top row with the persons the class had listed in response to question 3 above.

5. **Group:** Now list the communication situations mentioned in 3 above under the appropriate person in your matrix.

6. **Group:** Looking at these communication situations, describe the characteristics of each situation.

7. **Independent:** In the appropriate columns of the matrix, labeled "Characteristics of each situation", list the characteristics of each communication situation that we've developed together.

Oral Communication Matrix

People you communicate with at All						
Oral - Communication situations						
Oral - Characteristics of each situation						

ACTIVITY 2.5

1. Observe one or two people inside the plant. Closely examine the dress of each person to see what he or she is communicating. Start with such easily visible matters as color combinations and general styles. Then notice matters that are often ignored but contribute to a person's total appearance: shoes, jewelry, the presence or absence of a belt. Finally, include personal grooming (hair style and cleanliness). Write a one or two-paragraph description of what he/she is communicating about him/herself. Remember that for this exercise, your job is not to judge the person's dress; rather, it is to try to understand the image that, consciously or unconsciously, he/she presents through his/her dress and grooming.

ACTIVITY # 03

1. Divide into three-person teams. As a group, designate one person to act as the "sender", one as the "holder" and one as the "receiver".

2. Follow the instructions given by your facilitator.

3. **Debrief:**

   3a. What observations can you note about the activity?

   3b. Was it easy or difficult for you to complete your role? Why?

   3c. Was there a difference between the first and the second time your group performed the activity? If so, why do you think those differences exist?

   3d. Is this situation similar to any of the situations we mentioned in the matrix in Activity 2? Explain your response.

   3e. How can we revise the matrix to include any new insights mentioned in 3d?

ACTIVITY # 04

1. Divide yourselves into two-person teams. Designate one person in the group to act as the "supervisor" and one person to act as the "employee".

2. Follow the directions provided by your facilitator. Each "employee" is meeting with his/her "supervisor" to discuss the "employees's" performance. Both the "employees" and the "supervisors" will be provided with scenarios in which you have some choices. Be prepared to explain how you arrived at the choices.

3. **Debrief:** Independent: "Supervisors" should answer 3a1-3a5. "Employees" should answer questions 3b1-3b5.

   3a1. Which choice did you select? Why?

   3a2. What kind of messages do you think you were communicating to the "employee"? Support your explanation.

   3a3. What messages were you receiving from the "employee"?

3a4. How was this situation resolved? Explain your response.

3a5. Based on this situation, are there any observations you noted about oral communication?

3b1. Which choice did you select? Why?

3b2. What kind of messages do you think you were communicating to the "supervisor"? Support your explanation.

3b3. What messages were you receiving from the "supervisor"?

3b4. How was this situation resolved? Explain your response.

3b5. Based on this situation, are there any observations you noted about oral communication?

4. **Group:** As a group, "Supervisors" and "Employees" should now compare their findings with the rest of the group.

ACTIVITY # 04

"Supervisor's" Scenario

One of your least favorite duties is disciplining your subordinates. For the third time in a week and a half Mary Smith is twenty minutes late for work. It isn't even 7:30 yet and you feel as though you're already behind in your daily tasks. Before you can attend your 7:45 meeting with your boss, you must first talk to Mary about her tardiness.

Behaviors: Choose any one of the three.

1. While you are speaking with Mary, maintain minimal eye contact, shuffle papers, frown, use an even, soft voice. Tell Mary, "Mary, you've been late for work three times in the past 10 days. This is not like you and something needs to be done to change this situation. Do you have anything to say?" (Wait for a response.)

2. While you are speaking with Mary, maintain constant eye contact, point at her with your index finger, use a raised, firm voice. Tell Mary, "Mary, you've been late for work three times in the past 10 days. This is not like you and something needs to be done to change this situation. Do you have anything to say?" (Wait for a response.)

3. While you are speaking with Mary, try to maintain eye contact without staring, lean slightly forward in your seat, do not use hand gestures, use an even, firm voice. Tell Mary, "Mary, you've been late for work three times in the past 10 days. This is not like you and something needs to be done to change this situation. Do you have anything to say?" (Wait for a response.)

Response Options: Based on the "employee's" response, react in one of the following three way. Be prepared to tell us why you chose the option you did.

1. "From now on, I expect you to be to work at 7:00am. If you can't be to work on time, I'll have to take further disciplinary action."

2. "I understand your situation, but you must call me at least by 6:30am and tell me you'll be late and also let me know when you'll be in."

3. "I don't mind you coming in late because of this situation, but keep me informed on a weekly basis."

ACTIVITY # 04

"Employee's" Scenario

You are a quiet, private person. You hate to burden others with your problems and you never let your personal life interfere with your work life. Your six year old daughter has been very ill over the last two weeks. On three occasions you have been late to work as a result of her illness. While she is expected to fully recover, she is still feeling ill and you find it difficult to leave her. You are 20 minutes late today and your "supervisor" has asked you immediately to come to his/her office.

When your "supervisor" asks if you have anything to say, decide how much or how little of your situation you will tell him/her. Be prepared to explain afterward how you arrived at your decision.

Response options.

1. You are angry because you believe your "supervisor" is over-reacting to the situation. You react very defensively. Using a very firm, loud voice, tell your "supervisor", while staring at him/her, "You couldn't possibly know what it is like having a very ill child. If you had a heart, you'd understand a lot better."

2. You understand a little how your "supervisor" feels, but you are still a little angry how you've been treated. Maintain minimal eye contact, shuffle some papers, and firmly tell your "supervisor", "I have a very ill child. That child is my first priority. I'm sorry I've been late, but I couldn't help it."

3. You feel badly about the whole situation, and you're really afraid you may lose you job. Look away from your "supervisor" and tell him/her, "I'm sorry I've been late. I'd really like to work this out so I can both take care of my child and be a productive worker."

"Many ideas grow better when transplanted into another mind than in the one where they sprang up."

- Oliver Wendell Holmes, Jr.

ACTIVITY # 05

1. **Independent:** Brainstorm for about 5-10 minutes what it is like to work in a group. Then answer the following questions.

   1a. Is communicating in a group different than communicating one-on-one? If so, how? If not, why not?

   1b. Do you behave differently when you are solving problems in a group rather than when you're solving problems by yourself? If so, how? If not, why not?

2. **Group:** After you have brainstormed independently, brainstorm the topic again as a group. Discuss one another's insights and responses to the above questions. Make additional notes in the space provided below.

[1]Working Effectively In Groups

Being able to work effectively in groups is nearly a necessity in our society today. Rarely do we work, either in school or on a job, alone. As a result, we need to understand how individuals work in groups the best, and also what the various roles are for individuals in a group.

- **Need A Chairman As Facilitator.** A chairman, or facilitator, is needed for any group, even if the group contains only two people. Recent research suggests groups that appoint a chairman function more effectively and produce better results than those who do not. The chairman is a facilitator. His/her role is to be aware of the idea flow, to nudge it to complete the task, to be aware of what is and what should be going on in a group, to remind the group of the time schedule and the time remaining and to maintain decorum and a sense of organization to the group activity.

- **The Chairman Is Usually Not The Leader.** Being chairman does not mean being the leader. Leadership is the shared responsibility for the way in which the group is to behave. Every member of the group plays important leadership roles within the group. From situation to situation, different group members may play more dominant roles. Whoever has the most pertinent experience will be called on by the group to provide leadership.

  Sometimes the leadership evolves as the group solves problems. Leadership can develop because of special technical knowledge, because of ability to think up wild ideas, or because of organizational skills.

  Many make the mistake of equating being the chairman with being the leader. If anything, the chairman quietly yet firmly helps the group to follow its agreed-upon procedures. Thus, leadership rotates amongst the group members. As an aside, if there is not identified chairperson often one person will become the natural leader; later others may challenge that leadership-chairperson role and the group becomes the battleground as two or more fight for control of the group. This process undermines the whole process. However, with clearly identified roles and an awareness that leadership is valued but is not the sole property of one individual, such battles are minimized.

- **Chairpersons Have A Responsibility To Ensure The Following:**

  - individuals who present ideas similar to the chairperson's are not allowed to dominate the discussion;

  - the group atmosphere of individual acceptance, involvement, interaction and cohesion is maintained; and,

- the group's objectives are met (regardless, in the extreme, of whether he/she agrees with the decision made).

- **Hints For Chairpersons.**

  - Do not use your right as chairperson to force your decisions on the group. In other words, do not become an autocratic leader. Do not do this subtly by allowing persons with whose ideas you agree to monopolize the discussion.

  - If someone or a sub-committee is asked to do an in-depth study of a problem and bring recommendations to the group then the group should accept, reject or send back for reevaluation. The group should not take it upon itself to do the job the person was asked to do for the group. The reasons are: we want the individual to realize the importance of his/her assignment (we do not want group members to say, "There is no sense in me doing a good job because the group is only going to rehash it anyway!"), and we want to save group time. The chairperson prevents this type of behaviour.

- **Groups Need Both Task and Morale Oriented Activities.** Consider two extremes. The task gets done but no one in the group will ever speak to each other again. At the other extreme, the task does not get done, but everyone in the group had a fantastic time. They are now "great buddies". The first extreme occurs for a task oriented group with no morale or group building skills. The second extreme describes a group that is strong on morale activities and weak on task. Effective groups need both good task skills and good morale skills. Not everyone need possess or display the skills every minute of the activity, but someone needs to supply them when they are needed. Some examples of positive and negative components in these two categories are summarized on the following page. In the task oriented category, we assume the members possess the skills of awareness of the PS process, having a strategy, knowing heuristics, having prerequisites, being effective in internal self and external evaluation and having the thinking and attitudinal skills.

- **Optimum Size Group is 3, 5, or 7.** Research has found it better to have an odd number in the group (in case you decide to vote then you cannot end in a tie). For groups larger than 7, insufficient opportunity is given for everyone to feel as though they are participating. From a mechanics viewpoint, it is very difficult to get the group together simply because of the timetables and committments of the people.

Skills for Effective Groups

Task Oriented (PS)

Positive:	Negative:
Asks for and gives information, keeps on task, serves as leader when pertinent, keeps on the step of the strategy that the group is working on, aware of process, and helps group, brings in Schoenfeld management hierarchy to process, exhibits skills in analysis, creativity, broadening perspectives, generalizing, simplifying and attitudinal components needed. Summarizes ideas of others correctly and tries to put ideas into context of problem. Participates.	Refuses to share information, dominates the time with "story telling", story telling that is red herrings, is not succint, continually brings in red herrings, brings in ideas not pertinent to the step at hand (eg. pushes a solution to a problem when the group is exploring issues); unaware of and/or lacks skills in PS (thinking, attitudinal, evaluative).

Morale Oriented

Positive:	Negative:
Good eye contact, refers to colleagues by name, speaks to people, listens to others, ensures everyone has chance to contribute, mediates controversy, encourages and supports others, try to understand each other, openly describes shared feelings, builds on others ideas and gives credit to others, relieves group tension, trusting.	Attacks and criticizes members, appears to have eye contact but only is faking it, or looks into the middle of the group or stares down, antagonistic, shows tension never calls people by name, nods and appears to listen but is all a sham when you hear what they say, puts others down, interruptive, contradictory, does not participate or dominates, fights for leadership, manipulates group, distrustful.

[1]Woods, Donald. *The McMaster Problem Solving Program, Unit 23 Group Skills (Workshop).* Hamilton, Ontario Canada: McMaster University, 1985.

3. **Group:** Read the following scenario, and then as a group, resolve the situation as best as you can. Keep in mind our discussion of group dynamics.

You work on the maintenance crew, and you find that, in a particular toxic area of the plant, there are a lot of sharp corners and close quarters in which you have to work. You have been warned that all cuts incurred while working in this particular area of the plant should be treated and then reported to your supervisor. This week you have reported four minor cuts. Your shift supervisor calls you in because he believes you to be accident prone, and he wants to know what's wrong. Back on the job, you check with your friends and find that they get more cuts than you do; however, they carry a supply of bandaids with them. What do you do?

4. **Debrief:**

4a. Did the group designate a facilitator?

4b. Did each member of the group participate in the decision-making process?

4c. Did anyone in the group attempt to dominate or dominate the discussion? If so, how did the group handle that person?

4d. How did the group resolve the problem of reported incurred accidents?

5. **Independent:** Based on our discussion of communicating in a group, look at page 3 of Activity 2. Can you revise your matrix so that it incorporates any of the characteristics of group communication that we've discussed in Activity 5? If so, revise it accordingly.

6. **Independent:** Take about 15 minutes to write in your journal about any insights relating to oral communication that you've gained in this class up to this point. What has been the most helpful? The least helpful?

"We have been given two ears and but a single mouth in order that we may listen more and talk less."

- Zeno of Citium

ACTIVITY # 06

1. **Independent:** Brainstorm for about 5-10 minutes what you do when you listen. Are there skills associated with listening? If so, what are these skills and do you routinely use them?

2. After you have brainstormed independently, brainstorm the topic again as a group. Discuss one another's insights and responses to the above questions. Make additional notes in the space provided below. The goal here is to make a complete list of listening skills.

3. Telephone activity. Your facilitator will provide you with instructions to complete this activity. We will be using a tape recorder. You may not take notes.

4. **Debrief:** Read the original article. Then play back all the taped versions of the article. After that, answer the questions on the following page.

4a. Of the initial article, how much was lost in each retelling? How much changing of the story took place?

4b. Why do you think these errors or differences occurred?

4c. How could you have increased both the facts and the understanding of the story? How do you get feedback in real world incidents?

WILL ONE-THIRD LOSE THEIR JOBS? The bad news is that 33 percent of American workers should expect to be fired at some time during their careers, up from 25 percent five years ago, according to a survey of 150 executives at the nation's largest firms.

The (relatively) good news is that 79 percent of those same executives do not think getting fired is viewed as negatively as it was five years ago.

The Accountemps survey asked executives to estimate the percentage of all American workers who will be fired at least once during their working life. Thirty-three percent was the average response. But most executives also said they would not hold such job loss against someone seeking a new position, since employee termination today often has little to do with the worker's competence.

For information, contact Accountemps, 2884 Sand Hill Rd., Menlo Park, CA 94025; 415/854-9700.

ACTIVITY # 07

1. In this class, we will use a problem-solving guide for performing certain activities such as listening. The guide is based on W. Edwards Deming's cycle of Plan, Do, Study, Act. Two copies of the guide are shown on pages 4 and 5 of this activity.

2. "Active" listening.

"Active" listening is a form of listening whereby the listener takes a determined stance to understand what the speaker is saying. "Active" listening is based on the three following statements: most words have more than one meaning; the listener must do more than "hear" - he/she must decode messages to find their intended meaning; and, the listener must observe the person's attitude, tone, gestures, and eye contact as well as listen to the message.

To help you perform "active" listening, you can experiment with the three following listening responses. You may use just one or a combination of two or three.

2a. Dynamics of listening responses.

2a1. Clarify: ask...

Can you repeat that?
I'm not sure I understand what you mean.
Could you explain that a little more?

2a2. Paraphrase: say...

You think...
In other words,...
From what you've just said, you mean...

2a3. Summarize: say...

We've been talking about...
So far, we've mentioned...
As I understand it, you believe...

Now use these listening responses to complete question 3 below.

3. **Group:**

3a. Pick a partner. Have one person in your mini-group select a work-related topic of interest. That person then describes fully the chosen topic while the other person quietly listens. The speaker should talk for a maximum of three minutes. While that person is speaking, the listener should try to follow the topic and also take notes of any non-verbal behavior the speaker uses to convey his/her message (i.e. hand movements, eye contact, fidgeting, etc.) Also the listener should note the speakers tone, vocabulary and any other relevant items.

After the speaker has finished talking, the listener should use the listening responses described above in order to establish a clear line of communication and understanding between both persons - the speaker and the listener. The listener should provide honest feedback to the speaker while answering the questions below.

3b. Answer the following questions.

3b1. Did you use any of the listening responses to help you decode or clarify the speaker's meaning?

3b2. Did the speaker display any non-verbal behaviors? If so, what were they and what kind of impression did they make on you?

3c. Reverse roles with your partner and perform the same activity.

3d. Pick a partner. Have one person in your mini-group select a work-related topic of interest. That person then describes fully the chosen topic while the other person quietly listens. The speaker should talk for a maximum of three minutes. While that person is speaking, the listener should try to follow the topic and also take notes of any non-verbal behavior the speaker uses to convey his/her message (i.e. hand movements, eye contact, fidgeting, etc.) Also the listener should note the speakers tone, vocabulary and any other relevant items.

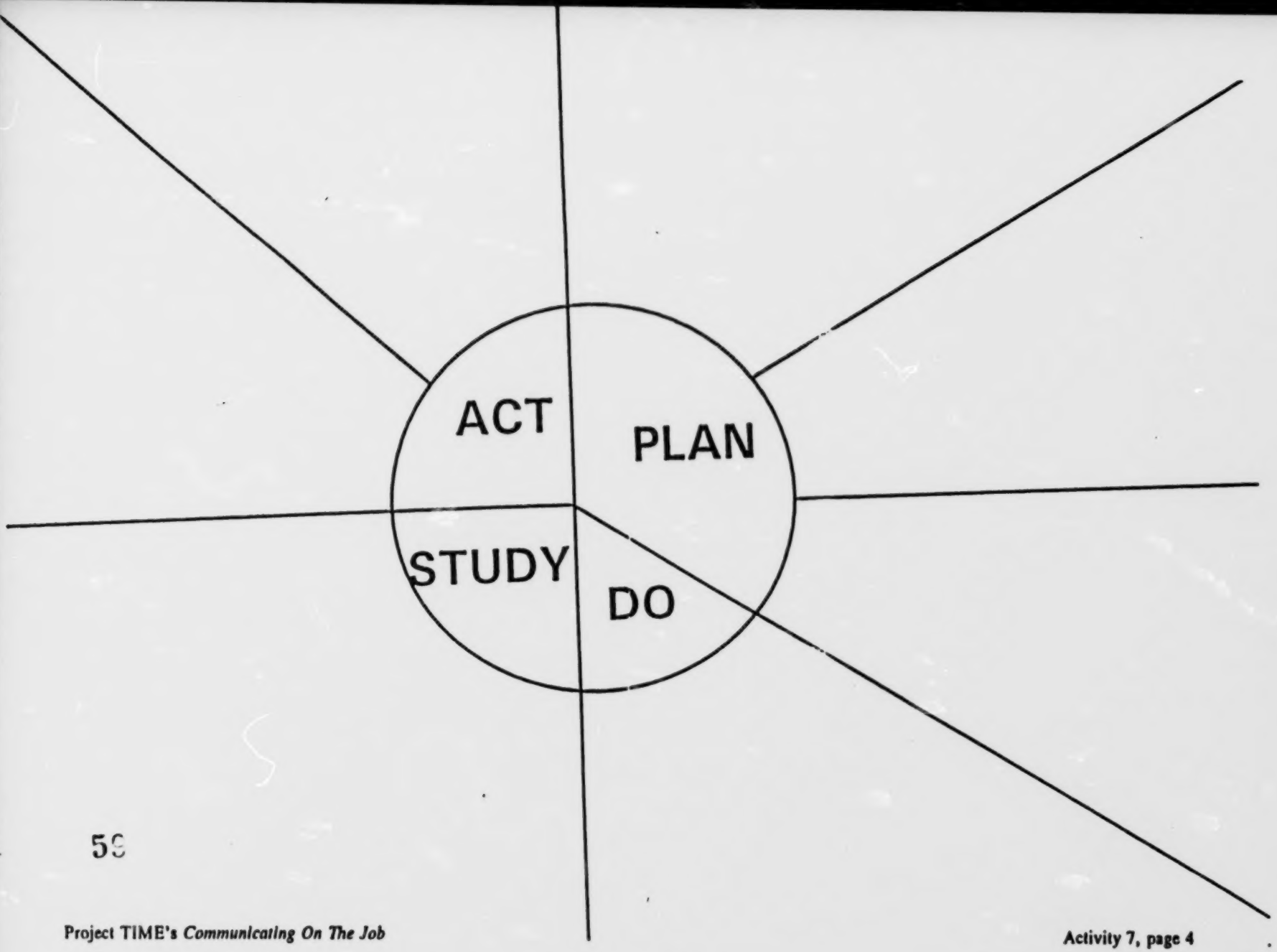
After the speaker has finished talking, the listener should use the listening responses described above in order to establish a clear line of communication and understanding between both persons - the speaker and the listener. The listener should provide honest feedback to the speaker while answering the questions below.

3e. Answer the following questions.

3e1. Did you use any of the listening responses to help you decode or clarify the speaker's meaning?

3e2. Did the speaker display any non-verbal behaviors? If so, what were they and what kind of impression did they make on you?

4. Based on your understanding of the PDSA guide for listening skills and your experience in Activity 3, did reading the guide before you performed the activity help you complete it? If so, how? If not, why not?


ACT
PLAN
STUDY
DO

Problem-Solving Guide for *Communicating On The Job*
- Listening -

Deming Cycle	TQT Process Step	COTJ Process Step	Purpose of Step	Tools
Plan	Define system, assess situation, analyze causes	Acknowledge sender, decode information, judge content	To allow sender a chance to articulate his message without receiver being judgmental or disruptive	silence; body language; eye contact; attention; open mind
Do	Try out improvement theory	react based on decoded information	To allow receiver, in his own words, to restate sender's message for clarification or agreement/disagreement	open mind; empathy
Study	Study the results	check to see if sender agrees or clarifies	To ensure both sender and receiver are seeing the situation similarly	eye contact; facial expressions; gestures; verbal response from sender
Act	Standardize improvements, plan continuous improvement	adjust accordingly - ask for clarification or continue	To allow for alterations in the communications/dynamics between sender and receiver	eye contact; facial expressions; gestures; verbal response from sender

ACTIVITY # 08

1. "Focused" listening.

Using "focused" listening techniques will help you concentrate on the message the speaker is sending you, and it will help improve both your understanding and your retention of what he/she is saying.

To practice "focused" listening, you need only a determination to improve your listening abilities and a speaker to listen to. You may practice "focused" listening in virtually any listening situation - with your supervisor, your co-workers, your family, etc.

The techniques used in "focused" listening are listed below.

1a. Pay attention! Try to focus all of your energy on **listening** to what the speaker is telling you. There is a big difference between hearing and listening. You must do more than hear what is being said. "Focused" listening involves the intent to both acknowledge that the speaker has something to say and comprehend what that message is. Also, don't be distracted by the manner in which the speaker delivers his/her information, and try not to let your mind wonder. If it does, force yourself to re-concentrate on the speaker's message. Remember you are concerned with content only!

1b. Look at the speaker. Maintaining eye contact can help you concentrate on what is being said.

1c. Always try to ask questions which help you to clarify the message. You can do this by jotting yourself a note or by politely interrupting the speaker. Performing this activity will keep stimulating your ideas and thoughts on the subject.

1d. Try to predict what information your speaker will provide you with next.

2. **Independent:** Listen to the tape your facilitator has of Dr. Willard Daggett. While you are listening to the tape, practice "focused" listening techniques. Then answer the following questions.

2a. Which of the "focused" listening techniques did you use? Did they help you concentrate on the speaker's message?

2b. What was the speaker's main message? Please summarize it in your own words.

2c. What did you notice about the way the speaker delivered his message?

2d. What were you thinking about while watching the video tape? Please answer this question honestly. (If you were really thinking of what you'll cook for tonight - that's ok!)

3. **Independent:** Now your facilitator will play another tape for you. Listen to the tape of Dylan Thomas' *A Child's Christmas in Wales,* and then answer the following questions.

3a. Which of the "focused" listening techniques did you use? Did they help you concentrate?

3b. What was the speaker's main message? Please summarize in your own words.

3c. What did you notice about the way the speaker delivered his message?

3d. What were you thinking about while listening to the audio tape? Please answer this question honestly. (If you were really thinking of what you have planned for this coming Friday night - that's ok!)

4. **Debrief:** As a group, discuss your answers to the above questions and make additional notes about each question in the space provided below.

2a.

2b.

2c.

2d.

3a.

3b.

3c.

3d.

5. **Independent:** Compare the two tapes.

5a. How were these two tapes similar? If they were not similar, how were they different?

5b. Did using "focused" listening techniques help you complete this activity? If so, which techniques helped the most? The least? If not, why do you think the techniques did not help?

5c. Which tape were you able to "focus" in on more? Why?

6. **Debrief:** As a group, discuss your answers to the above questions and make additional notes about each question in the space provided below.

5a.

5b.

5c.

7. **Independent:** Take about 15 minutes to write in your journal about any insights relating to listening skills that you've gained in this class up to this point. What has been the most helpful? The least helpful?

"Communication is something so simple and difficult that we can never put it in simple words."

- T.S. Matthews

The average speaker talks at the rate of about 125 to 150 words per minute or 7,500 to 9,000 words per hour. That translates into 20-25 double-spaced, typed pages of text with the average paragraph length 125-150 words. Most people speak about 1 paragraph per minute.

ACTIVITY # 09

1. **Independent:** Write the name of one person you believe to be a good speaker.

   1a. Why do this person's presentations appeal to you?

   1b. How does the presenter appear? Relaxed, etc.?

2. **Independent:** Assume you are the team leader of a MBA. You've been asked to speak at a managers' meeting about your team's experiences during the past year.

   2a. Are you comfortable with this assignment? If not, why not?

   2b. Will you spend time preparing for this meeting? If so, how will you prepare for the meeting? If not, why not?

   2c. If you answered 'yes' to 2b., about how long will you spend preparing?

   2d. In situations similar to the one above, how confident do you feel in your ability to communicate effectively with your audience?

   2e. On a scale of 1 - 10, rate yourself as a presenter given your current talents. Why did you answer the way you did?

3. **Group:** Discuss your answers to questions 1 and 2. Note any insights you gain from this discussion in the space below.

[1]4. Draw a piece of paper from the envelope provided by your facilitator.

4a. Talk about the relationship between the two items on your piece of paper. Feel free to be as creative and honest as possible.

4b. As you make your presentation, tell your teammates three things: what you are going to tell them; tell them; and, then tell them what you told them.

4c. Each team member has 2 minutes to make his/her presentation.

4d. After all team members have presented, identify one thing in each presentation that informed you, kept you interested, or entertained you.

1.	8.
2.	9.
3.	10.
4.	11.
5.	12.
6.	13.
7.	14.

4f. Discuss how you felt as you were making your presentation.

[1] QIP, Inc./PQ Systems, Inc., 1991.

5. **Independent:** The following chart is a problem-solving guide for speech preparation. Discuss this chart as a group. Can you relate the chart to anything you learned from question 4 above? If so, what?

6. **Group:** Discuss your responses to question 5 above. Make additional notes in the space provided below.

7. **Independent:** Once you have reviewed the following two pages, begin preparing a 10 minute presentation that you will deliver to the class during the next class session.

Problem-Solving Guide for *Communicating On The Job*
- Preparing for Presentations -

Deming Cycle	TQM Process Step	COTJ Process Step	Purpose of Step	Tools
Plan	Define system, assess situation, analyze causes	determine purpose and audience; gather material	To focus on main topic of speech and who the audience will be	brainstorming; talking with others
Do	Try out improvement theory	organize material; determine mode of delivery; outline or write out if necessary	To develop a presentation strategy	written notes or outlines
Study	Study the results	rehearse	To practice delivery of information	test audience; tape recorder; stop watch; mirror
Act	Standardize improvements, plan continuous improvement	revise	To polish speech	test audience; tape recorder; stop watch; mirror

Some Notes On Preparing For A Presentation

"Tell them what you're going to tell them; tell them;
then tell them what you've told them."

1. **Three rules for every presentation:**

   a. gear the subject to the audience's level of understanding of your topic;
   b. say things the audience can relate to; and,
   c. get the audience involved - i.e. thinking about your topic.

2. **Audience Interaction.** Your level of audience interaction depends on your purpose for speaking. If you are trying to motivate or entertain, then you will have a low level of interaction. If you are speaking to inform or analyze, then you will interact with them at a moderate level. And, if you are attempting to persuade or collaborate with your audience, then you will have a high level of interaction.

3. **Planning A Presentation.** There are four stages of planning a presentation: state the main idea (states how the audience can benefit from your presentation); form an outline, estimate the length of the presentation; and choose a style of delivery.

4. **Organizing Your Presentation.** Your presentation should be organized into three distinct parts - the introduction, the body, and the closing.

   The introduction gets your audience's attention, establishes your credibility, and provides the audience a preview of what you'll be talking about.

   The body of the presentation explains the who, what, when, why and how of your topic. Do not try to tackle too much in one presentation. Focus on no more than 3-4 main points.

   The closing allows you an opportunity to review the points you've already made. Since an audience's attention peaks at the end, take advantage of this opportunity and devote about 10% of the total time to your closing, but before you begin closing, tell your audience you're about to finish by using a transition like, "In closing,..." or "To sum it all up...". Keep your presentation positive and end with a memorable statement or a question.

"Three days after a presentation, message retention increases 55% if both oral and visual means are used."

- Eugene Raudsepp

Participant Journal

APPENDIX B

PROJECT TIME

TRAINING INITIATIVE FOR MANUFACTURING EMPLOYEES

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Project TIME... meeting today's training and education needs.

▲ *Rapid growth, changing customer needs, and increasingly sophisticated technology changed the face of the workplace and motivated A.I.I. to implement Project TIME.*

In June 1993, Lord Fairfax Community College formed a partnership with Automotive Industries, Inc., (A.I.I.) in Strasburg, Virginia, to implement "Project TIME," an 18-month workplace education program. This partnership, a demonstration project of the National Workplace Literacy Program, was funded through a $395,000 Federal grant and $175,000 in matching funds provided by A.I.I. and the College. ▼ The National Workplace Literacy Program provides assistance for demonstration projects that teach literacy skills needed in the workplace through exemplary education partnerships between business, industry or labor organizations and educational organizations. ▼ Through Project TIME, A.I.I.'s employees became eligible to enroll in specially designed, non-credit classes. ▼ The classes, offered on-site at the workplace, helped employees increase their skills in many areas including reading, communications, mathematics, problem-solving and teamwork. Project TIME is one of many ways the College teams with local industries and businesses to meet company training and education needs.

HOST BUSINESS

A.I.I. is a leading international manufacturer of automotive interior trim products which employs nearly 1,000 persons at its Strasburg Division. In recent years the company, founded in 1977, has faced the challenges created by rapid growth, changing customer needs, and increasingly sophisticated technology. In response, A.I.I. has upgraded its job training and re-training efforts and introduced quality team and Kaizen programs which promote quality improvement through employee involvement. Project TIME's educational program was designed to enhance workers' skills to enable them to participate more effectively in these company-sponsored programs and increase their productivity in today's changing manufacturing environment.

A.I.I.'s strong commitment to the educational development of its employees was evidenced by its decision to pay employees at regular or overtime rates for attending classes up to four hours per week.

EMPLOYEES

During the first three instructional cycles and an August "mini-session," 175 A.I.I. employees participated voluntarily in Project TIME classes. Most of these participants (75%) took two or more classes. Employees who chose to take classes were in many ways typical of A.I.I.'s total employee pool:

- their average age was 39
- half had been employed by the company for 6 to 10 years
- most others had been employed 5 years or less
- two-thirds were women
- most participants were front-line, hourly workers, although floor supervisors, office personnel and mid-level managers also enrolled in classes

In addition to employees who volunteered to take classes, approximately 40 employees from three selected work groups were required to participate in a pilot class taught during the project's final instructional cycle.

PROGRAM

During the project's ninety-day start-up phase, project staff initiated and completed a comprehensive needs analysis which identified potential weaknesses in employees' skill levels. Staff interviewed managers, supervisors, and front-line workers, observed jobs performed by workers in the target population, and collected and analyzed written documents and other materials used in the workplace. They offered classes to address each area initially identified as requiring improvement, and developed additional classes during the grant period as other needs arose. Classes offered included the following:

- Practical Algebra
- Basic Math
- Metric Math
- GED Prep
- College Prep
- Calculator Math
- English Skills for Workplace Writing
- Problem Solving through Reading
- Decision Making and Goal Setting
- Career and Educational Development
- Creating and Understanding Graphs
- Communicating on the Job I and II
- Technical Reading and Writing
- Words at Work and Beyond
- Computer Assisted Math
- Computer Assisted Writing
- Workplace Speaking Skills
- Computer Assisted Grammar
- Listening Skills
- English as a Second Language

▼ *Using customized course material, instructors employed a variety of techniques in the classroom including individual tutoring.*

▲ *Student learning was enhanced by the use of technological tools.*

Project TIME employed innovative and varied instructional approaches which actively involved employees in the learning process. Instructors developed activities using graphs, handbooks, memos, articles and notices, as well as actual tools and manufactured parts from the workplace. They used workplace problems as teaching scenarios in math, reading, writing and communication classes. Students participated actively in independent and group activities and facilitated classes to develop leadership skills as well as to practice skills introduced in the classroom. Instruction also included guest presentations, computer-assisted instruction and field trips to introduce participants to important community and educational resources.

In the later months of the program, project staff and company management worked together to plan for the company's transition to an upgraded and ongoing education program for its employees. As part of this effort, project staff developed and taught three sections of a class required for designated groups of employees. The classes were composed of intermingled groups of front-line, supervisory and support personnel whose respective job functions were closely related to one another. The course incorporated some of the most successful aspects of other classes and specifically addressed company-identified areas of need including improved communications, computational skills, group problem-solving and team building.

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R E S U L T S

To assist in measuring the impact of Project TIME classes on individual learners, each participant completed workplace-specific assessments designed to show the student's demonstrated skills in reading, writing, performing calculations, solving problems and making decisions. Sixty-two percent of participants demonstrated statistically significant improvement in overall assessment scores after participating in Project TIME classes.

▲ *Students completing Project TIME classes demonstrated improved skills, but the most widely observed results of their participation were the "intangibles": motivation, self-esteem, and a positive attitude toward work and learning.*

Further, the program has been positively evaluated by participants and company management:

"By any measure, Project TIME has been a huge success in opening the minds of our work force and increasing the knowledge base of every employee enrolled in the program."

Ray Steinly
General Manager

"Employees are more willing to speak out and express their ideas... They can tackle the math activities in Kaizen more easily. A math exercise that used to take one and a half hours to complete now only takes thirty minutes to complete."

Martha McDonald
Industrial Engineer & Kaizen Facilitator

"Project TIME helped me remember that learning is fun!"

Shelley Stout
Inventory Auditor

"Knowing my past here...the trouble I've had...the managers were reluctant to let me give the plant tour (to corporate managers). But I did it and Ray Steinly (General Manager) said I did a great job. The communication classes have helped a lot."

Eddie McDonald
Operator

"I'm glad that the GED class was offered and that I had a chance to get my GED. The instructors took time to help you understand the material. I wish Project TIME was staying longer."

Robin Mathers
Assembly

LORD FAIRFAX 25 ANNIVERSARY

Lord Fairfax Community College is an institution of higher education preeminently recognized for its teaching excellence, its student success rate, its responsiveness to internal and external communities, and its partnerships with business, industry, government, agencies, elementary and secondary schools and colleges and universities.

Final Performance Report
Project TIME
Lord Fairfax Community College

I. Comparison of actual accomplishments to the objectives contained in the approved application.

Objective I: To design and develop job-specific literacy audits and the instructional curriculum during the project's first ninety days.

Actual accomplishment: The project staff designed, developed, and conducted job-specific literacy audits and designed instructional curriculum during the first ninety days of the project. This phase of the project was successfully accomplished during the allotted timeframe. Documents and records reflecting these accomplishments are available for review.

Objective II: To develop and post, in the workplace, brochures and flyers describing the project; to incorporate information about the project in industry newsletters and in internal communication systems of the industrial partner; to provide the participants with a detailed intake form for use in establishing an individualized program for each adult learner; and, to interview each participant immediately following completion of the intake form.

Actual accomplishment: This phase of the project was successfully accomplished during the allotted timeframe. Documents and records reflecting these accomplishments are available for review.

Objective III: To schedule classes and determine the number of classes per educational component based on results of audits, arrange time and locations based on workforce needs, schedule the use of the Mobile Computer Classroom; to develop individual educational plans; to conduct class sessions; and, to meet with adult learners to determine progress in class sessions and any additional educational needs.

Actual accomplishment: This phase of the project was successfully accomplished during the allotted timeframe. Documents and records reflecting these accomplishments are available for review.

Objective IV: To recruit and hire tutors; to train tutor/lab assistants; to provide tutorial assistance to participants for 15 months; and, to provide volunteer tutorial assistance to participants for 15 months.

Actual accomplishment: This phase of the project was successfully accomplished during the allotted timeframe. Documents and records reflecting these accomplishments are available for review.

Objective V: To distribute written information to participants in need of support services, to provide occupational interest testing and program information; to provide career counseling; and, to provide financial aid application assistance and skills training program enrollment assistance.

Actual accomplishment: This phase of the project was successfully accomplished during the allotted timeframe. Documents and records reflecting these accomplishments are available for review.

II. **Timeline for accomplishment of objectives.**

Objective I: This objective was scheduled to be concluded by June 1993. Because the project's start date was delayed from March '93 to June '93, the objective wasn't completed until September '93. It was however completed within the ninety day timeframe that was allotted.

Objective II: All tasks were completed either ahead of or on schedule.

Objective III: As was stated under Objective I. in this section, the grant's start-up date was delayed and thus the dates for accomplishing the tasks included in this objective were also pushed back; however, all tasks were accomplished within the timeframes allotted in the grant.

Objective IV: As was stated under Objective I. in this section, the grant's start-up date was delayed and thus the dates for accomplishing the tasks included in this objective were also pushed back; however, all tasks were accomplished within the timeframes allotted in the grant.

Objective V: As was stated under Objective I. in this section, the grant's start-up date was delayed and thus the dates for accomplishing the tasks included in this objective were also pushed back; however, all tasks were accomplished within the timeframes allotted in the grant.

IIIA. **Number and characteristics of project participants.** During Project TIME's three 13-week semesters, one 8-week semester, and one 4-week "mini-session," two hundred two individuals registered for and completed four hundred seventy-four courses. Fifty-eight percent of the project participants enrolled in more than one TIME class. The average participant took 2.3 classes.

Participant Demographics. TIME's participant demographic information is quite similar to the total current employee base of Automotive Industries' Strasburg Division. In the case of race and educational levels, it is indicative of Virginia's Northern Shenandoah Valley area as well. (Based on 1990 census information, 92% of the Valley's population was Caucasian, 5.08% African American, and 1.4% Native American. In the same census, approximately 69% of the Valley's population self-reported having earned a high school degree or GED.)

Participants' Job Categories:	93%	Front line workers
	7%	Supervisors and/or salaried employees
Participants' Gender:	69%	Female
	31%	Male
Participants' Average Age:	35 years	
Participants' Race:	91%	Caucasian
	6%	African American
	2%	Hispanic
	1%	Native American
Participants' Length of Time with Company:		
	44%	0-5 years
	42%	6-10 years
	11%	11-15 years
	3%	16+ years
Participants' Educational Levels:	61%	High school graduates
	17%	GED certificate holders
	13%	Less than a high school diploma
	9%	Some college

IIIB. Number and characteristics of participants who did not complete courses. During Project TIME's three 13-week semesters, one 8-week semester, and one 4-week "mini-session," sixty individuals registered for but did not completed courses. Demographics for those individuals are shown below.

Participants' Job Categories:	93%	Front line workers
	7%	Supervisors and/or salaried employees
Participants' Gender:	62%	Female
	38%	Male

Participants' Average Age: 35 years

Participants' Race:

97% Caucasian
3% African American

Participants' Length of Time with Company:

43% 0-5 years
47% 6-10 years
5% 11-15 years
5% 16+ years

Participants' Educational Levels:

46% High school graduates
28% GED certificate holders
13% Less than a high school diploma
13% Some college

IIIC. Assessment outcomes. Pre- and post- authentic assessments were given during the 1st, 2nd, and 4th semesters. The assessments were designed to measure improvements in the areas of reading, decision-making, math, problem-solving, and writing. The results from Paired T-Tests run on each of the semesters' data follow:

1st semester: The total assessment scores improved an average of 2.92 points (significant at $p < .05$). Three subtests increased significantly. Subtest A (reading) displayed an increase of .47 points. Subtest B (decision-making) improved an average of .49 points, and Subtest C (math) increased, on average, 1.62 points.

2nd semester: Total assessment scores for 2nd semester increased an average of 2.54 (significant at $p < .05$). Two subtests increased significantly. Subtest A (reading) increased 1.33 points on average, while the average improvement for Subtest E (writing) was .8 points.

4th semester: Total assessment scores for 4th semester increased an average of 2.54 points (significant at $p < .05$). Two subtests increased significantly. Subtest A (reading) increased 1.41 points on average, while the average improvement for Subtest D (problem-solving) was .66 points.

IIID. Changes in on-the-job behaviors. Changes in on-the-job behaviors were monitored through a variety of devices such as: (1.) participants' comments on the Instructor and Course Evaluation forms and Individual Training Plans, (2.) supervisor feedback gathered from Supervisor Rating forms and supervisor focus groups, and (3.) instructor anecdotal information. The majority of documentation gathered indicated that significant

changes in participants' on-the-job behaviors occurred. All documentation is available for review and a portion of the findings are contained in the attached External Evaluator's Final Report.

IIIE. **Individual outcomes.** (1.) Twenty-four project participants enrolled at Lord Fairfax Community College and two individuals completed their GED through the program.

(2.) There were significant increases in participants' self-esteem, morale, and motivation as was documented on the Instructor and Course Evaluation forms and Individual Training Plans, and Supervisor Rating forms.

IIIF. **Additional project outcomes.** (1.) During the 1st semester, the participants who were enrolled in a *Technical Reading and Writing* class formed an Employee Stock Club. The stock club meetings were initially facilitated by the class' instructor, but later that responsibility was transferred to the employees.

(2) Automotive Industries requested that the project design and offer a mandatory pilot class called, *Building Effective Team Skills*. The class was taught for three distinct workcells in the company's new plant 4.

(3) The company institutionalized the program by hiring a project instructor to serve as its Human Resources Development Coordinator.

IV. **Dissemination activities.** A variety of dissemination activities were undertaken during the course of the 18 month grant period. College personnel, including the President, the Coordinator of Public Information and Development, and project staff made numerous presentations on behalf of the program. Some of those presentations included: Rotary meetings, Chamber of Commerce meetings, an in-house faculty development meeting, the Institute for the Advancement of Professional Development conference, local school board meetings, the American Association of Adult and Continuing Education (AAACE) conference, and the Virginia Community College System's (VCCS) annual conference. In addition to presentations at the above meetings/conferences, the project was featured in its own three-color brochure, two editions of the College's *In The News* newsletter which reaches 1,500 people, and the College's Annual Report which has a circulation of 30,000. Copies of this report, a final financial report, and the project's external evaluator's report will also be sent to the Division of National Programs, U.S. Department of Education and ERIC clearinghouse on Adult, Career and Vocational Education. Curriculum materials will be available from the East Central Curriculum Coordination Center in Springfield, Illinois.

V. **Evaluation activities.** Evaluation activities were based on both formative and summative evaluation procedures and were conducted in three distinct phases: Phase I - Start-Up Period; Phase II - Formative Evaluation; and Phase III - Summative Evaluation.

Phase I - Project Start-Up Period. During the first ninety days of the project, the following efforts were conducted and evaluated: an occupational task analysis, literacy audits, the development of initial curricula, the set-up of instructional locations, the organization of a learning lab, the distribution and collection of Supervisor's Input Sheets, and the development of a policies and procedures manual.

Phase II - Formative Evaluation. This phased monitored and documented progress made during each cycle. Formative data for each participant registered in each semester consisted of the following: registration form, Individual Training Plan (ITP), pre-/post-assessments (semesters 1,2, and 4 only), Instructor and Course Evaluation forms, and attendance records. In addition the following was also maintained: Career and Educational Advisor reports, instructors' weekly reports, project director's cycle summaries, lab schedules, recruitment reports, assistants' records, and curriculum outlines.

Phase III - Summative Evaluation. Data collected for this phase measured the overall assessment of processes and procedures for the project and consisted of: enrollment summaries, attendance records, a complete list of project participants, pre- and post-assessment results, Instructor and Course Evaluation forms, Supervisor Rating forms, AII management comments, curricula outlines, project calendars, and, a policies and procedures manual.

External Evaluator's Report. An external evaluator was employed by the project and submitted the attached report.

VI. **Changes in key personnel.** (1) Career and Educational Advisor. The project's initial advisor resigned in December 1993 and was replaced by Ms. Jennifer Bousquet in January 1994. (2) Math Instructor. The project's initial math instructor resigned in June 1994 and was replaced (for the summer only) by Mr. Bill Daniel. A part-time math instructor, Mr. Grayson Redford, was hired to complete the final instructional semester.